

## CLAIMS

What is claimed is:

1. A channel allocation method for a CDMA communications network comprising:
  - establishing at least two groups of spreading codes;
  - 5 determining the mobility of a user of said CDMA communications network; and
  - assigning said user a spreading code from one of said groups of spreading codes selected based on said user's mobility.
2. The channel allocation method of claim 1 wherein determining said mobility of said user 10 of said CDMA communications network comprises determining a Doppler frequency of a channel used by said user.
3. The channel allocation method of claim 2 wherein assigning to said user a spreading code from one of said groups of spreading codes selected based on said user's mobility 15 comprises assigning said user a spreading code selected from a non-preferred set of spreading codes based on said Doppler frequency.
4. The channel allocation method of claim 3 wherein assigning said user said spreading code selected from said non-preferred set of spreading codes based on said Doppler frequency 20 comprises assigning a non-preferred spreading code to said user if said Doppler frequency is less than a predetermined threshold.
5. The channel allocation method of claim 2 wherein assigning to said user a spreading code from one of said groups of spreading codes selected based on said user's mobility

comprises assigning said user a spreading code selected from a preferred set of spreading codes based on said Doppler frequency.

6. The channel allocation method of claim 5 wherein assigning said user a spreading code

5 selected from a preferred set of spreading codes based on said Doppler frequency comprises assigning a preferred spreading code to said user if said Doppler frequency exceeds a predetermined threshold.

7. The channel allocation method of claim 1 further comprising reassigning a user originally

10 assigned a spreading code selected from a first group of spreading codes to a spreading code selected from a second group of spreading codes.

8. The channel allocation method of claim 7 wherein reassigning a user originally assigned

15 a spreading code selected from a first group of spreading codes to a spreading code selected from a second group of spreading codes comprises reassigning a user originally assigned to a spreading code selected from a non-preferred set of spreading codes to a spreading code selected from a preferred set of spreading codes if a spreading code from said preferred set of spreading codes is available.

20 9. The channel allocation method of claim 7 wherein reassigning a user originally assigned

a spreading code selected from a first group of spreading codes to a spreading code selected from a second group of spreading codes comprises reassigning a user originally assigned to a spreading code selected from a preferred set of spreading codes to a spreading code selected from a non-preferred set of spreading codes to make said preferred spreading code available to another user.

10. A base station in a CDMA communications network comprising:  
a base transceiver system comprising at least one transceiver for communicating with  
mobile terminals; and  
5 a base station controller to assign spreading codes to users of said CDMA  
communications network, wherein said base station controller is operative to  
determine the mobility of users of said CDMA communications network, and to  
assign a spreading code to at least one of said users based on said at least one  
user's mobility.

10

11. The base station according to claim 10 wherein said controller determines said mobility  
of said users by determining a Doppler frequency of channels used by said users.

12. The base station according to claim 11 wherein said base station controller assigns  
spreading codes selected from a set of non-preferred spreading codes to selected users where  
said Doppler frequency meets predetermined conditions.

15

13. The base station according to claim 12 wherein said base station controller assigns  
spreading codes selected from said set of non-preferred spreading codes to selected users  
20 where said Doppler frequency is less than a predetermined threshold Doppler frequency.

14. The base station according to claim 13 wherein said base station controller assigns  
spreading codes selected from a set of preferred spreading codes to selected users where said  
Doppler frequency fails to meet said predetermined conditions.

25

15. The base station according to claim 14 wherein said base station controller assigns spreading codes selected from said set of preferred spreading codes to selected users where said Doppler frequency is greater than a predetermined threshold Doppler frequency.

5 16. The base station of claim 10 where said base station controller is further operative to reassign users originally assigned a spreading code selected from a first group of spreading codes to a spreading code selected from a second group of spreading codes.

10 17. The base station of claim 16 where said base station controller is further operative to reassign users originally assigned to spreading codes selected from a non-preferred set of spreading codes to spreading codes selected from a preferred set of spreading codes when spreading codes from said preferred set of spreading codes are available.

15 18. The base station of claim 16 where said base station controller is further operative to reassign users originally assigned spreading codes selected from a preferred set of spreading codes to a spreading code selected from a non-preferred set of spreading codes to make said preferred spreading code available to another user.

19. A method of managing channels in use by one or more mobile terminals in a CDMA communications system, said method comprising:

establishing a preferred set of spreading codes and a non-preferred set of spreading  
5 codes;

assigning users to at least one spreading code selected from said preferred set of spreading codes if available; and

assigning selected users to at least one spreading code selected from said non-preferred set of spreading codes when the demand for spreading codes exceeds the number of spreading codes in said preferred set of spreading  
10 codes, wherein said users assigned non-preferred spreading codes are selected based on the mobility of said users.

20. The method of claim 19 further comprising determining mobility of users by determining a Doppler frequency of channels used by said users.

21. The method of claim 20 wherein assigning selected users to at least one spreading code selected from said non-preferred set of spreading codes when the demand for spreading codes exceeds the number of spreading codes in said preferred set of spreading codes comprises  
20 selecting users assigned to said non-preferred spreading codes based on said Doppler frequency.

22. The method of claim 19 further comprising reassigning users originally assigned to a non-preferred spreading code to a preferred spreading code if a spreading code from said  
25 preferred set of spreading codes is available.

23. The method of claim 19 further comprising reassigning a user originally assigned to a preferred spreading code to a non-preferred spreading code to make said preferred spreading code available to a new user.

5

00000000000000000000000000000000